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March 12, 2000

Box Patent Application
Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Transmitted herewith for filing is a patent application as follows:

Inventors: Zvi Or-Bach and Dan Kikinis
Title: System and Method for Consolidated Shipping and Receiving
Using Reusable Containers
Docket: Or-Bach2

Also enclosed are:

2 sheets of informal drawings
3 pages of Declaration (unsigned)
1 return receipt postcard
1 check for \$462.00
1 Information Disclosure Statement including 4 references

CLAIMS AS FILED

	<u>Claims</u>	<u>Extra Claims</u>	<u>Rate</u>	<u>Additional Fee</u>
Total Claims	18	0	\$9	\$0
Independent Claims	6	3	\$39	\$117
Basic Fee				\$345
Total:				\$462

A check for \$462.00 is enclosed herewith.

Please note that this application is entitled to small entity status. A small entity declaration will be filed in due course.

This transmittal letter is being filed in triplicate.

Respectfully Submitted,
Ken Leeds

Kenneth E. Leeds
Reg. No. 30,566
Attorney for Applicants

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6 SYSTEM AND METHOD FOR CONSOLIDATED SHIPPING AND
7 RECEIVING USING REUSABLE CONTAINERS
8

9 Zvi Or-Bach
10 Dan Kikinis

11 Background of the Invention

12 This invention pertains to a system and method for shipping products in
13 commerce. This invention also pertains to a system and method for tracking shipping
14 containers and the returning of shipping containers.

15 With the arrival of the internet, many existing businesses have changed the way
16 they do business. The driving force behind this change is E-commerce (“EC”), short for
17 electronic commerce, as trading on the internet is known. There are several types of E-
18 commerce, e.g. business to business (B2B), business to consumer (B2C) and consumer to
19 consumer. The most notable form of consumer to consumer E-commerce is in the form
20 of auctions.

21 One problem in E-commerce is shipping. Some E-commerce companies ship
22 directly from a warehouse to the recipient, e.g. using one of the currently existing parcel
23 services. Although not very expensive, for small items the shipping costs can be
24 substantial. However, the costs of shipping can be partially offset by the avoidance of
25 local sales taxes when the purchaser and vendor are from different states.

26 There are several problems other than shipping. For example, returning
27 purchased items can be inconvenient. Even receiving the purchased items can be
28 inconvenient e.g., if no one is home during office hours, when most deliveries occur.

1 In order to accommodate purchasers, some grocery deliverers offer to have a
2 buyer deposit a key with the deliverer. The deliverer's employees can then enter the
3 buyer's home unattended. This creates several problems. For example, disputes can
4 arise, since no one signs for goods that are delivered.

5 Another problem is that the privacy and security of the homeowner are
6 compromised. Further, since the drivers must also have all relevant alarm codes, they
7 may become prime targets for robberies, not so much for the goods on the truck, but for
8 the keys and alarm codes that they carry.

9 Another problem is when unsupervised children are at home. When drivers are
10 hired, normally the background checks on those drivers are not very extensive. This
11 creates risks for the unsupervised children, and their possible exposure to undesirable
12 elements.

13 Our U.S. Patent Application Serial No. 09/481,783, filed January 11, 2000,
14 teaches a system and method for low cost delivery of goods, without intruding into the
15 sanctity of the home. This system and method permits signing for delivery and
16 facilitating easy and inexpensive return of unwanted merchandise, in a manner that is
17 easy for the purchaser and efficient for the business. (The '783 application is
18 incorporated herein by reference.)

19 It would be desirable to reduce the cost and improve service quality of a system
20 and method for delivery of goods by allowing better tracking of shipments. It would also
21 be desirable to reduce cost and waste associated with such a system and method. In
22 particular, it would be desirable to reduce the waste and cost associated with the
23 containers used to ship and/or deliver goods.

1

2 Summary

3 A method in accordance with the invention comprises the steps of providing
4 goods to purchasers in reusable containers. When the purchaser returns the reusable
5 containers, a deposit can be credited to the purchaser's account.

6 In accordance with one novel feature of the invention, tracking apparatus such as
7 an RFID ("Radio Frequency Identification) is attached to the reusable container. (As
8 explained below, RFIDs are well known, and comprise a small radio transmission device.
9 The RFID can be electronically queried, and in response to such querying, provide a data
10 signal identifying the particular RFID.)

11 In one embodiment, prior to delivering goods to the purchaser in the reusable
12 container, the vendor makes an entry in a memory device (e.g. a RAM, memory disk,
13 memory tape, or other device) identifying the reusable container and the purchaser to
14 whom the container is being delivered. When the purchaser returns the container to the
15 vendor, the return of the container can be electronically tracked. Specifically, the RFID
16 attached to the returned container is again electronically queried, and the information
17 provided by the RFID can be entered into the above-mentioned memory device, thereby
18 indicating that the reusable container has been returned. The deposit can thus be credited
19 to the purchaser's account automatically. This reduces the expense of tracking the return
20 of reusable containers. This facilitates the use of reusable containers, which would be
21 prohibitively expensive for shipping goods if they were not returned to the shipper or
22 vendor.

1 In one embodiment, the goods are shipped to customers in accordance with the
2 method taught in the '783 application.

3 Also, in one embodiment, the RFID can be used to track the goods in the
4 container as they are shipped through the distribution network to the customer.

5

6 Brief Description of the Drawing

7 Fig. 1 is a block diagram illustrating a system for ordering goods and providing
8 those goods to a purchaser through consolidated shipping in accordance with our '783
9 application.

10 Fig. 2 illustrates an example of a reusable shipping container with an integrated
11 RFID for facilitating tracking

12 Fig. 3 illustrates a reusable pallet for carrying or holding reusable containers.

13

14 Detailed Description

15 In this patent we will first describe the system taught in our '783 application. As
16 mentioned above, this system provides purchased goods to customers in an efficient
17 manner. We will then describe an improvement whereby goods are packaged in
18 containers using RFID tracking apparatus.

19 In a system in accordance with the '783 application, a purchaser places an order
20 online from his or her net appliance (typically a personal computer 100), either at work or
21 at home. Computer 100 is connected via an internet service provider (ISP) 102 to
22 internet 101. The purchaser accesses internet 101 via computer 100 to order goods from
23 a plurality of vendors. The vendors can be any of numerous types of vendors, e.g.

1 vendors of groceries, electronic goods, hardware items, office supplies, appliances,
2 furniture, gardening goods, clothing, perfume, etc.

3 In order to order these goods, the purchaser has several options. For example, the
4 purchaser can connect to a portal 120 via a connection 110. In one embodiment, portal
5 120 is a server. Connection 110 is invoked by accessing the URL (universal resource
6 locator) of portal 120 in the same way that internet web pages are typically accessed.
7 Portal 120 offers connections 122a to 122d to associated vendors, symbolized by boxes
8 130a to 130d, each having a server coupled for receiving orders from portal 120. Each
9 vendor is typically an independent company. The purchaser communicates via portal
10 120 with vendors 130 to order goods from each vendor. The purchaser also typically
11 instructs the vendors when the goods are to be picked up and the location from which the
12 goods are to be picked up. As explained below, the purchaser has a choice of several
13 central locations SML1 to SML3 from which he or she can pick up the goods. (The
14 servers of vendors 130 may provide availability information so that the purchaser can
15 have an idea as to the earliest possible time for pick-up.) The purchaser can either pay
16 for the goods at this point in the transaction using a credit card, or at the location and time
17 of pick-up.

18 A purchaser also has the option of communicating with vendors 130a to 130d
19 without going through portal 120, e.g. by accessing the servers of vendors 130a to 130d
20 directly through the internet. This is symbolically illustrated by connections 121a to
21 121d for connecting ISP 102 directly to one or more of vendors 130a to 130d. In one
22 embodiment, vendors 130a to 130d have their own internet web site, and are contacted
23 via their URLs. A purchaser can use a bookmark in his or her browser, or contact

1 vendors 130 using other types of application software running on internet appliance (e.g.
2 PC) 100. Again, in this embodiment, the purchaser indicates when the goods are to be
3 picked up, and where they are to be picked up from.

4 Optionally, the goods of each vendor 130 can have their own separate brand that
5 identifies the point of origin of those goods separate and apart from the manner of
6 distribution. Alternatively, a brand or trademark can be associated with the goods that
7 indicate its origin in terms of the company providing the distribution mechanism. This
8 brand can be applied to the various goods purchased using the method of the '783
9 application, even though the goods may have been manufactured or supplied by different
10 vendors 130. Alternatively, the brand applied to the goods may reflect both the vendor
11 130 and the company providing the distribution mechanism.

12 Vendors 130a to 130d are examples of numerous vendors. However, there can be
13 numerous vendors, a small number of vendors or only one vendor. The vendors can use
14 common portal 120 or separate web sites.

15 Some of the links shown in Fig. 1 (e.g. links 110 and 121) are internet links.
16 These links are not typically permanent, but rather, are established on a temporary basis,
17 as is typical in use of the internet.

18 In the embodiment of Fig. 1, the servers of vendors 130a to 130c are
19 electronically linked via connections 131a to 131c to their warehouses 140a to 140c.
20 (Optionally, these servers may be physically located within warehouses 140.) These
21 links permit vendors 130a to 130c to instruct their warehouses 140a to 140c to ship
22 ordered goods to a regional warehouse 150 via shipping lines 141a to 141c. After
23 consolidating the goods into a single order at warehouse 150, the consolidated order is

1 forwarded to a selected one of exemplary supermarkets SML1 to SML3 for pickup. (The
2 specific supermarket SML is typically selected by the user at the time of ordering.)
3 Alternatively, vendors 130a to 130c can bypass warehouse 150 and ship ordered goods
4 directly to one of exemplary supermarkets SML1 to SML3 for consolidation and pick-up.
5 (In the embodiment of Fig. 1, establishments SML1 to SML3 are supermarkets.
6 However, establishments SML1 to SML3 can be any kind of retail establishment.)

7 Vendor 130d uses a different technique, in that it has a warehouse 140d merged
8 into regional warehouse 150. In some embodiments, there is only one regional
9 warehouse. In other embodiments, there are many regional warehouses across the
10 country. Each regional warehouse 150 consolidates orders for purchasers in a particular
11 geographic area.

12 In some embodiments, supermarkets SML may use the same approach to allow a
13 user to pre-order groceries (e.g. via the internet), and have them bagged and ready for
14 pickup at the same time as the goods from warehouses 140. This is facilitated by also
15 informing supermarkets SML as to what groceries are being pre-ordered, and when the
16 purchaser will pick up these groceries. This information is provided by internet appliance
17 100 to supermarkets SML via internet links 121 or 110, and electronic links 135 at the
18 time the groceries are being pre-ordered. (Links 135 are provided between vendors 130
19 and supermarkets SML. Only a few of links 135 are shown in Fig. 1. One or more
20 computer terminals or PCs including one or more data output devices are provided at
21 supermarkets SML so that personnel at supermarkets SML are made aware of the pre-
22 ordering of groceries.) Vendors 130 also inform supermarkets SML, via links 135, when
23 the goods from vendors 130 are to be delivered. Along with this information, handling

1 instructions may also be sent, e.g. to open and show the purchaser a certain product and
2 let him sign a receipt reflecting inspection of the actual product and its function, rather
3 than merely signing a receipt reflecting receipt of just a box.

4 After the goods are ordered from vendors 130, consolidated and provided to one
5 of supermarkets SML, and/or groceries are ordered from one of supermarkets SML, the
6 purchaser can then come to that supermarket SML, at the mutually agreed time, and pick
7 up both pre-ordered groceries and the goods freshly delivered by vendors 130. The
8 purchaser may also quickly browse the supermarket first, for the few items he forgot to
9 pre-order.

10 In one embodiment, the purchaser may use his credit card, store card or other type
11 of magnetic or electronic card when first stepping into the cash register line. This can be
12 accomplished by passing the card through an electronic card reader to inform appropriate
13 inventory order processing/control automation or personnel of the purchaser's arrival.
14 Thus, by the time the purchaser gets to the register, a bag handler can bring the purchased
15 goods to the register for pickup, ready in a cart, with printed instructions, or instructions
16 on the display of the cash register. An example of a typical printed instruction is an
17 instruction concerning the filling out of a warranty card, instructions concerning use of
18 the product, or an instruction concerning obtaining a cash rebate from a manufacturer.

19 An additional option is to allow the purchaser to scan his credit card or a store
20 club card at the entrance of supermarket SML, thereby permitting the supermarket to
21 respond by pulling the ordered merchandise to have the merchandise ready at the
22 checkout counter.

1 When returning an item, the purchaser brings in a receipt and the item to the
2 supermarket SML, and gets credit after the clerk checks return instructions with the
3 vendor. This can be done using one of computer links 135 between supermarket SML
4 and vendors 130. Of importance, a method in accordance with one embodiment of the
5 '783 method permits a user to return goods from any of numerous vendors 130 to one
6 location (e.g. one of supermarkets SML), thereby saving the purchaser from the
7 inconvenience of having to make numerous trips to numerous locations.

8 This method allows so called brick and mortar stores to stay competitive with e-
9 commerce vendors by adopting certain aspects of E-commerce and becoming a one stop
10 service center for purchasers, e.g. open 7 days a week, 24 hours per day. While the
11 above-described method is typically used by supermarkets SML, in other embodiments, it
12 is used by drug stores, convenience stores, or other types of sales establishments. These
13 other types of sales establishments can serve as distribution hubs for many different kinds
14 of goods from the various vendors 130. In lieu of a retail establishment, a warehouse
15 such as warehouse 150 can serve as the pick-up point.

16 To enhance operation of the system, once orders are accepted, they are
17 immediately transferred from the vendor 130 accepting the order to its warehouse 140, as
18 well as the downstream supermarket SML handling the transaction. The warehouse
19 computer system (designated as 150a in Fig. 1) and/or the supermarket computer system
20 can also manage logistics, such as transportation in a manner known in the art. There are
21 numerous ways to inter-network multiple servers using WANs (e.g. the internet) so that
22 any computer or server or cluster of servers can be used to embed any function. In some
23 cases so called proxy servers may be used to interface parts of the system. In other cases,

1 proxy servers, or parts of the service can be outsourced to so-called Application Service
2 Providers (ASPs). In other cases, special protocols, such as XML (extensible markup
3 language) or DHTML (dynamic hypertext markup language) etc. or alternatively
4 “drivers”, “pipes”, “adapters” etc. can be used. By using any or any combinations of the
5 above listed or similar software elements in any physical combination of servers or
6 equivalents, an essentially equivalent system can be built. Both the physical and logical
7 topology of the system are very flexible, although it is desirable to have the logical
8 topology approximate the physical flow for merchandise to reduce the risk of
9 miscommunication.

10 In lieu of using a network such as internet 101, in another embodiment, the user
11 contacts the store SML and/or vendors 130 by telephone, e.g. using a toll free number
12 such as an 800 number, and using an automatic number identification (ANI) Caller-ID
13 system to identify the purchaser. A server then notifies the store and instructs the store
14 via telephone to ready the merchandise so that by the time the purchaser reaches the
15 store, the merchandise is placed in suitable containers (e.g. bags) for the purchaser to pick
16 up. Systems that can receive a phone call and actuate computer programs are well known
17 in the art, and are sometimes referred to as Interactive Voice Response (IVR), or Voice
18 Response Units (VRU).

19 Optionally, a local courier service or an existing delivery service of the local store
20 can be used to make a local, consolidated delivery from one of supermarkets SML (or
21 central warehouse 150) to the purchaser.

1 The various options for providing goods to purchasers (e.g. pick-up at
2 supermarkets SML or consolidated delivery) are indicated by arrow bundles 160a to
3 160c, symbolizing the flow of goods out of supermarkets SML.

4 In another aspect of the '783 method, supermarkets SML can provide bonuses, or
5 enhanced bonuses for pre-ordered items such as staples like milk, bread, flour, etc., since
6 it permits the store to run a tighter inventory, but still meet all the demand. (Such
7 bonuses can be in the form of cash discounts or bonus point programs, wherein the points
8 can be traded in for various products.)

9 The '783 application further describes an enhanced method in which pickup is
10 arranged using a specially designated area within market SML containing numbered
11 boxes or lockers. When a purchaser arrives at a given time, he or she can pick up his or
12 her merchandise simply by going to an assigned locker and entering a onetime password
13 on a control panel associated with the locker. This unlocks the locker and permits the
14 purchaser to pick up the goods and exit the store without further delay. Lockers are not
15 typically permanently assigned, but rather, are assigned when the pickup time is
16 established. The password can be selected by the vendor or market SML and
17 communicated to the purchaser at the time he or she orders the goods. Alternatively, the
18 purchaser can select the password at the time he or she orders the goods. In yet another
19 embodiment, the purchaser may have a pre-assigned password that is unique to that
20 purchaser, and used for all the purchaser's transactions.

21 Alternatively, instead of a password, the purchaser scans his store card or credit
22 card with an electronic card scanner/reader located on the locker. (This use of the credit
23 card can also be the means by which the purchased goods are paid for.) This unlocks the

1 locker and permits the purchaser to exit the store without further delay. (The control
2 panel or scanner is typically in electronic communication with a computer system within
3 supermarket SML that receives order information via one of links 135. Thus, the
4 distribution system can control which credit card or pass combination the locker responds
5 to. The distribution system also monitors when pick-up has occurred.)

6 Optionally, at the request of the customer, or by default, the customer may be
7 alerted by an alerting system to the availability of his or her goods. That alerting system
8 may be for example a voice call (automated from one of the servers such as a server at
9 the pickup location or elsewhere and a connected voice response unit), e-mail from a
10 server with or without a human caller, e-mail in conjunction with a page from an
11 electronic pager, a message provided on a cell phone, or other alerting method or system.
12 In some embodiments a message board in the pick up location (e.g. store) may flash an
13 order number to indicate availability.

14 The invention described in our '783 application can be practiced using stores or
15 other commercial establishments other than supermarkets. For example, any type of
16 chain (e.g. regional, local, national or global) that has supply chain management can use a
17 method in accordance with the invention, e.g. drug stores, convenience stores, mail
18 outlets such as the U.S. Postal Service, Mail Boxes etc.TM, gas stations, warehouse stores,
19 banks or other chains or franchise outlets that have substantial traffic. In some
20 embodiments, no prior arrangement with the store is required, to have products delivered
21 there. Also, the purchaser does not have to have a special preexisting contractual
22 arrangement with the store to receive goods there, other than the specific order that he or

1 she placed via the internet. In this embodiment, the purchaser may or may not incur
2 expense, other than the specific order, to receive goods at the store.

3 Depending on the type of supply chain management implemented, local or
4 regional centers may not necessarily be owned or operated by a retail chain, but rather by
5 a third party, such as a wholesaler or a large vendor, selling key items such as bread, soft
6 drinks, etc. which require daily deliveries.

7 Modules for internet-to-supply chain management (SCM) software can be
8 provided that follow preset rules, and invoke auxiliary services, such as instruction
9 printing at the outset of ordering merchandise, warranties, the setup of a software
10 installation (when required), etc. Such software can be partitioned and implemented in
11 many ways, and can be hosted on any of one or several servers, including the servers
12 shown in Fig. 1. The novel approach is to link two or more vendors via the portal
13 function, where the buyer communicates to the vendors what product is being purchased,
14 and how/when it will be delivered or picked up. For simplicity, the pickup/delivery
15 facility within the store (e.g. pick-up boxes) is not shown here in Fig. 1. As described
16 above, more than two vendors can be included in one transaction, which creates
17 synergistic sales and has a single delivery system.

18 The above-described system can be further improved, and both cost and service
19 aspects can be improved, by introducing an RFID (Radio Frequency IDentification) tag
20 in a re-useable container. RFID tags are well known. They are small apparatus that can
21 be affixed to a container and queried via radio waves. When queried, they provide
22 identification information. RFID tags are described, for example, by Amanda Loudin,
23 “RFID Comes Into Its Own”, published by Warehousing Management

1 (<http://www.warehousing.com/FEATURES/WM0499F2.HTM>), “FASTRAK and
2 OTHER RFID Systems” (<http://cwc.ucsd.edu/~chapelle/RFID/rfid.html>), “New 13.56 MHz Tag
3 Opens RFID to New Applications Tag Provides High Performance at Low Cost”
4 (<http://www.businesswire.com/webbox/bw.020199/983835.htm>), and Eric Sells, “New
5 RFID Tag Chip Features Advanced Anti-Collision with Simultaneous Interrogation of 10
6 Tags” (<http://www.microchip.com/0/Company/Edit/pRelease/PR78/index.htm>). These
7 documents are being submitted in an information disclosure statement filed herewith and
8 incorporated herein by reference.

9 RFIDs are seldom used in consumer applications, because at about 0.5 to 2 dollars
10 per unit they would become a substantial cost element, especially when a typical shipping
11 cost is about 1 to 3 dollars for small parcels for mass shippers.

12 Cardboard boxes typically used for shipping, and the labor required to prepare the
13 boxes for shipping, impact the cost of shipping, as it can take a couple of minutes to
14 prepare a box. The box itself can cost 0.5 to 2 dollars.

15 By using reusable containers that have an RFID built in, those costs can be
16 reduced. Similar to a bottle redemption value, a 2 to 10 dollar charge (depending on
17 market acceptance and actual cost of container with a RFID) can be levied if the
18 purchaser does not return the container within a certain time period in useable state (e.g.
19 not dirty or damaged) to one of the outlets (e.g. supermarkets SML). That free time
20 period is provided to allow the purchaser to use the original shipping box to return a
21 purchased item, thus preserving the item’s appearance and preventing it from being
22 damaged during the process of returning it.

1 Inside the reusable container, air inflatable bags, bubble wrap, Styrofoam
2 "peanuts," or other structures can be used to stabilize and protect the contents. They can
3 be returned with the container, further reducing waste and cost. Fig 2 illustrates an
4 example of such a reusable container or box 201. Referring to Fig. 2, box 201 comprises
5 a cover 202a attached to a bottom unit 202b by 2 hinges 203a, 203b. Cover 202a also has
6 two latches 204a, 204b, which lock into slots 211a, 211b, respectively, in bottom unit
7 202b. Holes 212 and 213 in bottom unit 202b and cover 202a line up to allow sealing
8 box 201, for example with a plastic tie or seal.

9 A compartment 214 within box 201 contains the RFID 216 (shown in phantom).
10 RFID 216 is distance and multi-readable in the preferred embodiment. By distance
11 readable, we mean that RFID 216 can be read by reading apparatus from a distance
12 (typically up to several feet). By multi-readable, we mean that several RFIDs can be read
13 simultaneously or substantially simultaneously. This allows a whole pallet to be scanned
14 at once, for example as it is loaded off or onto a truck. Such scanning can be done at any
15 point along the shipping route or distribution chain, allowing for better tracking at low
16 cost.

17 Box 201 is designed such that multiple boxes can be securely stacked on one
18 another. For example, in Fig. 2, a foot 220 extends downward from the bottom of box
19 201. Foot 220 fits into and mates with a cavity in the cover of a box upon which box 201
20 is stacked. Similarly, box 201 includes a cavity in its top surface to receive the foot 220
21 of a box placed on top of box 201. (This cavity is not shown in Fig. 2, as it would be on
22 the far side of cover 202a in Fig. 2.)

1 In one embodiment, the distribution chain can also use boxes that are half the size
2 of box 201. Thus, two half-boxes can be placed together on top of (or below) full size
3 box 201. Similarly, two quarter size boxes can fit on top of (or below) a half size box,
4 and so forth.

5 Fig 3 shows a re-usable pallet 300, which comprises cavities 301a-d for receiving
6 e.g. full size boxes. The pallet may also contain an RFID 302 for better inventory
7 tracking. In other words, RFID can be used to track the location of pallet 302.

8 In one embodiment, there may also be 2 or 3 different heights of boxes in
9 accordance with the invention. For example, there can be standard boxes of a given
10 height, boxes of half that standard height, and boxes of a quarter of that standard height.
11 Thus, when stacking goods on pallet 300, 2 half height boxes or four quarter height boxes
12 can be stacked adjacent a full height box, allowing the vendor to mix and match many
13 box sizes in a convenient manner on one pallet. If boxes are stacked on a pallet such that
14 the total height of the boxes exceeds a certain height, the pallets may be shrink-wrapped
15 to further stabilize them. Since the RFID allows scanning of all units on a pallet without
16 physically reaching it, even RFIDs affixed to boxes buried within the pallet load can be
17 scanned and inventoried.

18 The goods for a given purchaser are typically loaded into box 201 at warehouse
19 150 (although they could also be loaded into box 201 at warehouses 140 or supermarket
20 SML). At this time, a scanner 250 (Fig. 2) is used to read identification information from
21 RFID 216, and that identification information is entered into a memory device 150b,
22 along with information corresponding to the purchaser who is to receive the box.
23 Memory device 150b can be a memory disk, memory tape, a semiconductor memory, or

1 some other type of memory device. Fig. 1 shows that memory device 150b is located at
2 warehouse 150 and Fig. 2 shows that scanner 250 is linked to memory device 150b via
3 computer 150a. However, the physical location of memory 150b is not critical to the
4 present invention. Memory device 150b and computer 150a could be located anywhere,
5 but memory device 150b is preferably electronically linked to the location where goods
6 are being placed in box 201. Also, preferably, different computer systems and servers
7 throughout the distribution channel have access to memory device 150b so that the
8 location of box 201 can be tracked from numerous points in the distribution channel.

9 Scanner 250 can be a hand-held scanner coupled to computer 150a either with a
10 wire, or without a wire (e.g. using an IR or radio wave communication link). However,
11 whether memory device 150b is linked to scanner 250 via computer 150a or through
12 some other means is not critical.

13 The RFID within box 201 can be scanned by scanners similar to scanner 250
14 when box 201 leaves warehouse 150 (or 140) and when box 201 arrives at supermarkets
15 SML, as well as at various points along the way. (Optionally, such scanners can be
16 linked to memory 150b.) When this occurs, information in memory 150b can be updated
17 so that the progress of the order can be tracked. Memory device 150b is also updated
18 when box 201 is provided to the purchaser and when the purchaser returns box 201.

19 Box 201 is typically returned by the purchaser at a central collection point such as
20 one of supermarkets SML. The RFID in box 201 is scanned by a scanner similar to
21 scanner 250 (also preferably linked either directly or indirectly to memory 150b) at the
22 collection point, and memory 150b is updated. Memory 150b can be coupled to or
23 accessed by a computer that automatically credits the purchaser's account upon receipt of

1 the box 201 at the collection point. The computer that credits the purchaser's account can
2 be either the same as or different from computer 150a. (In lieu of crediting the
3 purchaser's account when box 201 is returned, the computer can bill the purchaser if box
4 201 is not returned. within a predetermined time period such as 30 days.)

5 By introducing a redemption value to the containers, better, more sophisticated
6 containers can be used, without incurring the otherwise prohibitive cost per shipping.

7 In another embodiment, the containers are never released to the end customer, but
8 rather opened in his presence and merchandise is then handed to him at that point
9 immediately. That removes the redemption burden from the customer, and it reduces the
10 risk of chemical or other contamination or damage that might occur when the container is
11 in the possession of certain users.

12 In yet another embodiment the container has no RFID, but uses conventional
13 tagging methods like human readable indica or machine readable indica (or both human
14 readable and machine readable indicia), such as bar codes, magnetic strips, etc. The use
15 of a re-useable, resealable container in such a closed cycle system for dry goods in and of
16 itself is considered novel by the inventors. Such use of a reusable container is further
17 novel when delivering single orders to consumers or hand-off points as described above.

18 In another embodiment, based on the different vendors and products and/or
19 product types shipped, the shipping consolidator can create a profile. For example, a
20 computer such as computer 150a collects information concerning the buying habits of a
21 particular customer. The information can include a) what type of goods the customer
22 likes to buy; b) what kind of credit cards the customer uses; c) what types of vendors he

1 likes to buy from; etc. This can be used to target the customer for sending him
2 advertisements.

3 In one embodiment, the customer is offered subsidized or free shipping in return
4 for the customer's agreement that advertisements can be added to or placed in the
5 reusable container (along with the merchandise). (Alternatively, the advertisements may
6 be attached to the outside of the reusable container, or inserted into a portion of the
7 container in such a way that the advertisements are nonetheless visible from the outside
8 of the container, e.g. through windows in the container. Opt-in and opt out options can
9 be used to allow the customer to choose whether or not to receive the advertisements.

10 The customer can receive a discount if he agrees to receive such advertising.
11 Alternatively, in other embodiments, the customer must pay an extra fee to not receive
12 such advertisements. The advertising material is not limited to printed paper, but may
13 also include digital media, such as CD ROMS, bar codes, URLs etc. In some
14 embodiments, where the customer receives free shipping anyway, the proceeds of such
15 advertising may be directed to the party paying for the shipping services.

16 In case the customers receive the containers, sniffer probes may be used on
17 returned containers at certain points of the return path for empty containers, thus allowing
18 the shipper to weed out such units and possibly bill the customer for it.

1 We claim:

2 1. A method comprising:

3 providing goods in reusable containers, said reusable containers having RFID

4 apparatus attached thereto;

5 establishing a relationship between an RFID and a memory;

6 providing said goods in said containers to customers;

7 collecting said reusable containers from said customers; and

8 identifying which customers have returned their reusable containers by

9 electronically querying the RFIDs attached to the reusable containers collected from said

10 customers.

11

12 2. Method of claim 1 wherein said establishing of said relationship comprises

13 storing in said memory a database including data associated with said RFID.

14

15 3. Method of claim 1 wherein said establishing of said relationship comprises

16 storing in said memory an identification indicia indicative of said RFID.

17

18 4. Method of claim 1 wherein said establishing of said relationship comprises

19 storing in said memory an identification of the customer to whom said container is

20 provided.

21

22 5. Method of claim 1 further comprising:

1 receiving orders from customers, said orders being for goods from a plurality of
2 vendors, said orders being communicated to each of said vendors;
3 collecting said goods from said plurality of vendors at a central location;
4 providing said goods in said reusable containers;
5 informing said customers when said goods will be available for pickup; and
6 making said goods available for pickup by said customers, wherein said goods are
7 in said reusable containers.

8

9 6. Method of claim 5 wherein said customers return said reusable containers
10 to a central collection point, said method further comprising querying the RFIDs within
11 said containers when said customers return said containers to said collection point.

12

13 7. Method of claim 1 further comprising crediting accounts of those
14 customers who return their reusable containers, said crediting being accomplished by a
15 computer that receives the data scanned in from said RFIDs.

16

17 8. A system comprising:

18 a memory;

19 a plurality of reusable containers, each reusable container having RFID apparatus
20 affixed thereto; and

21 a scanner for scanning the RFID apparatus affixed to said containers and tracking
22 when said containers are provided to customers and when said containers are returned by
23 said customers.

1
2 9. System of claim 8 wherein a computerized billing system is electronically
3 coupled to the memory so that a customer can be billed if that customer does not return
4 the reusable container.

5
6 10. A method comprising:

7 providing goods in reusable containers, said reusable containers having RFID
8 apparatus attached thereto;
9 establishing a relationship between an RFID and a memory;
10 shipping said goods in said containers to a distribution point;
11 providing said goods to customers;
12 collecting said reusable containers; and
13 identifying which containers have been collected by electronically querying the
14 RFIDs attached to the reusable containers.

15
16 11. A system comprising:

17 a memory;
18 a plurality of reusable containers, each reusable container having RFID apparatus
19 affixed thereto; and
20 a scanner for scanning the RFID apparatus affixed to said containers and tracking
21 said containers.

22

1 12. System of claim 11 wherein said containers are collected at a collection
2 point after they have been used to ship products, whereby said scanner scans the RFID
3 apparatus affixed to said containers at the collection point so that the location of said
4 containers can be tracked.

5

6 13 A method comprising:

7 providing goods in reusable containers, said reusable containers having an indicia
8 attached thereto;
9 establishing a relationship between said indicia and a memory;
10 providing said goods in said containers to customers;
11 collecting said reusable containers from said customers; and
12 identifying which customers have returned their reusable containers by reading
13 the indicia attached to the reusable containers collected from said customers.

14

15 14. Method of claim 13 wherein said indicia comprise machine readable
16 indicia, said method further comprising scanning said machine readable indicia prior to
17 providing said goods in said containers to said customers, and entering into said memory
18 information indicating the containers and the customers to whom said containers are
19 being provided.

20

21 15. Method of claim 14 wherein said indicia comprises a bar code or a
22 magnetic strip.

23

1 16. Method of claim 14 further comprising collecting said containers from
2 said customers and scanning said indicia after collecting said containers from said
3 customers.

4

5 17. Method of claim 13 wherein said indicia are machine-readable indicia,
6 said reading of said indicia comprising scanning said indicia electronically.

7

8 18. A method comprising:

9 providing goods in reusable containers, said reusable containers having
10 identification indicia attached thereto;

11 establishing a relationship between that indicia and a memory;

12 providing said goods in said containers to customers;

13 collecting information on the purchasing habits of said customers; and

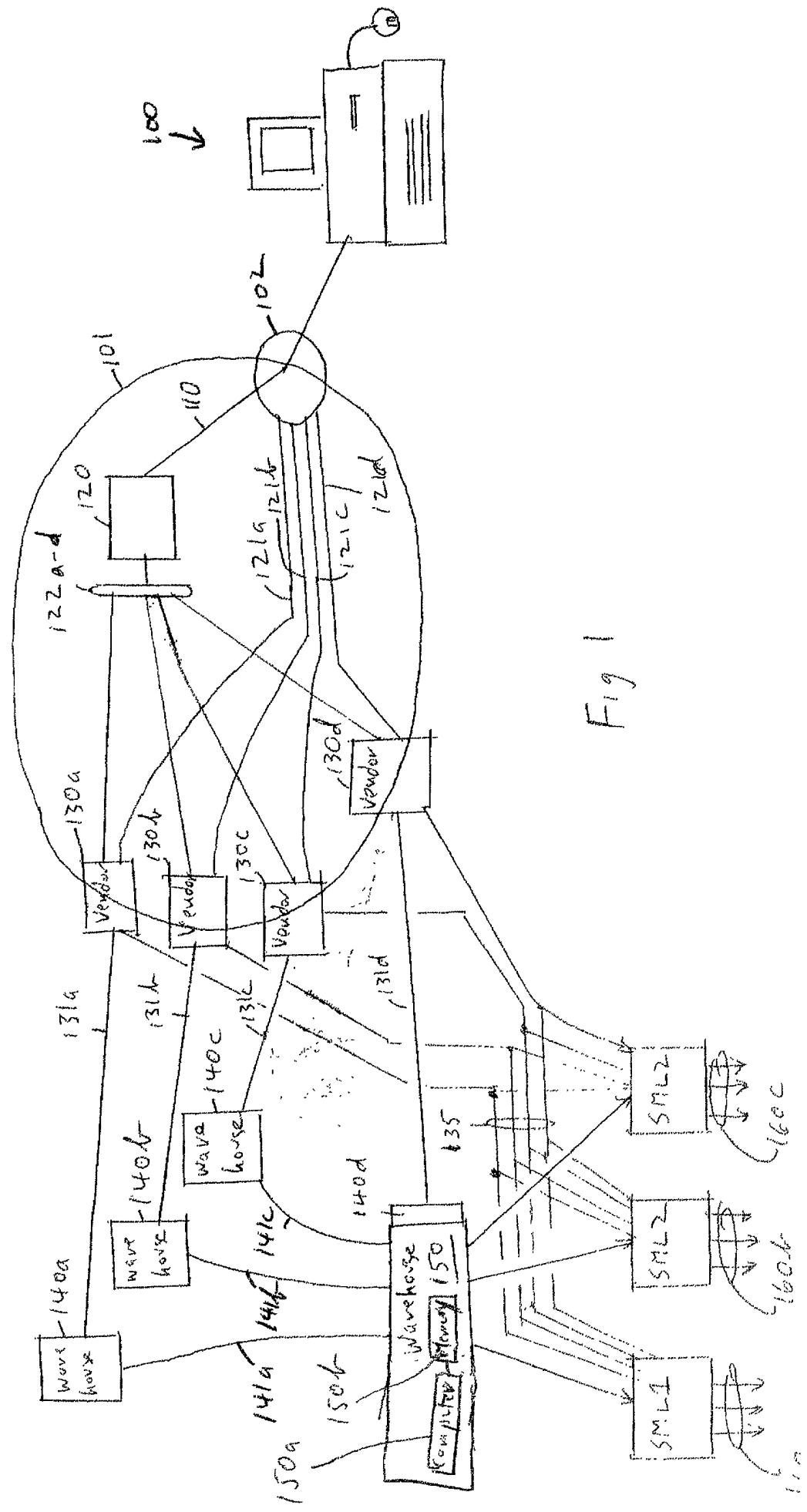
14 offering a reduction of shipping cost in exchange for allowing targeted
15 advertisement to be added to the reusable containers.

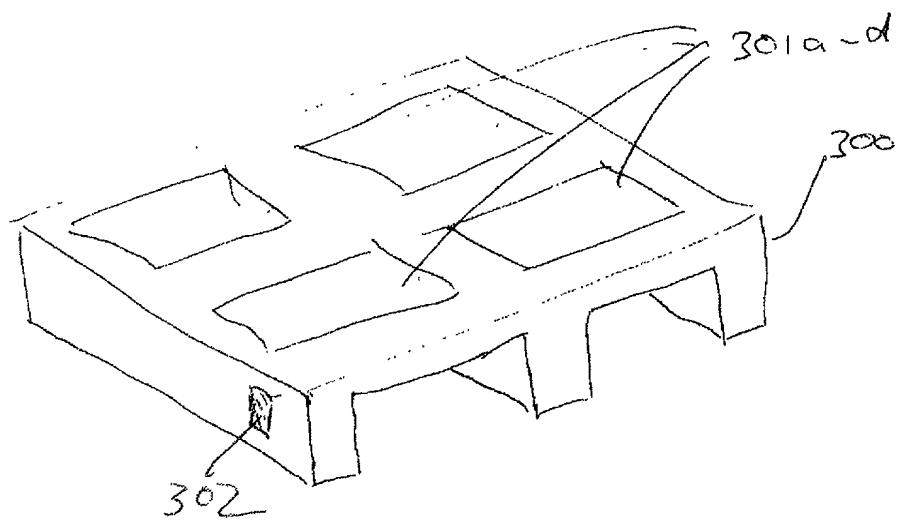
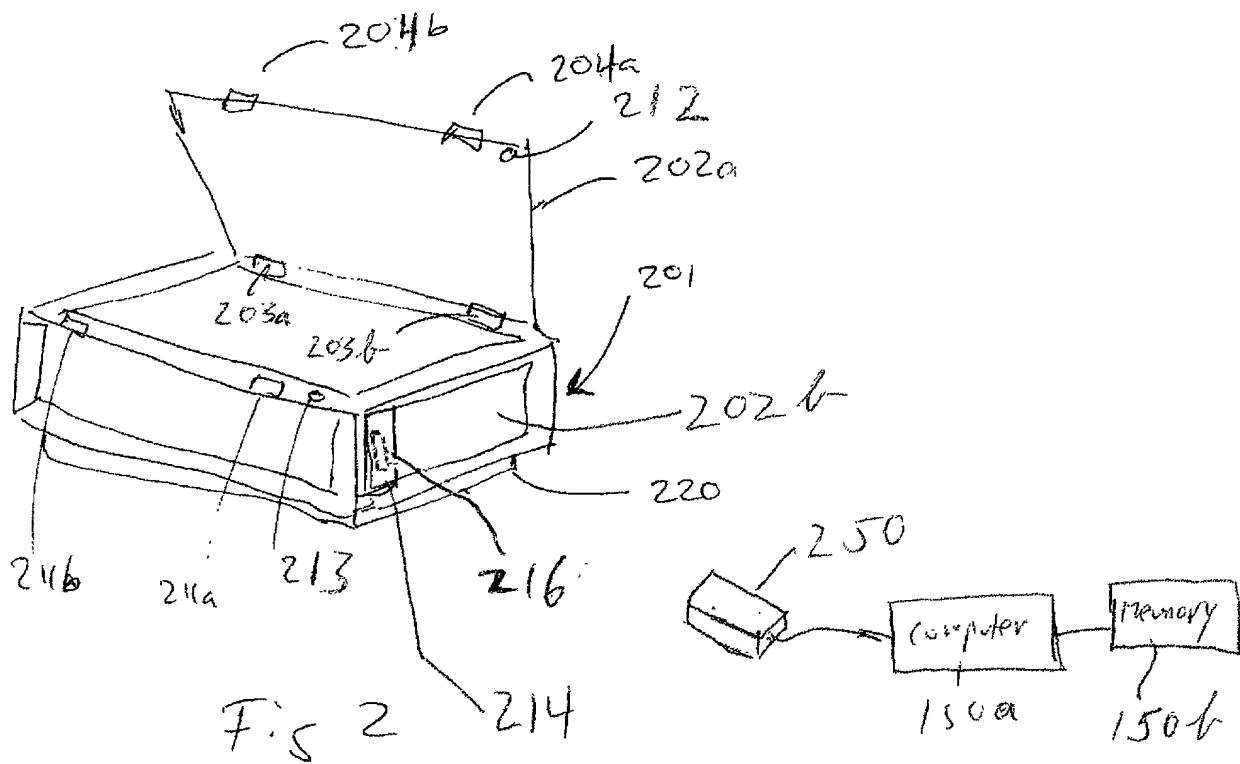
16

17

1 Abstract

2 Products are delivered to customers using reusable containers. The reusable
3 containers are equipped with a radio frequency identification (RFID) tag that is used by
4 the vendor or deliverer to track whether the reusable container has been returned to the
5 vendor or deliverer. The user can be credited with a deposit if he or she returns the
6 container. The RFID can also be used to track the contents of a truck load or pallet load
7 of containers.





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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

Declaration Submitted with Initial Filing Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	Or-Bach2
First Named Inventor	Zvi Or-Bach
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

System and Method for Consolidated Shipping and Receiving Using Reusable Containers

the specification of which

(Title of the Invention)

is attached hereto

OR

was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

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Application Number(s)	Filing Date (MM/DD/YYYY)	
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[Page 1 of 2]

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U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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 Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Kenneth E. Leeds	30,566		

Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: A petition has been filed for this unsigned inventor

Given Name (first and middle if any) Family Name or Surname
Zvi Or-Bach

Inventor's Signature						Date	
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Post Office Address							
City	San Jose	State	CA	ZIP	95124	Country	US

Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

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DECLARATION**ADDITIONAL INVENTOR(S)**
Supplemental Sheet
Page 1 of 1**Name of Additional Joint Inventor, if any:** A petition has been filed for this unsigned inventor

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Family Name or Surname

Dan

Kikinis

Inventor's Signature					Date	
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Given Name (first and middle [if any])	Family Name or Surname					

Inventor's Signature					Date	
Residence: City		State		Country		Citizenship

Post Office Address						
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Post Office Address						
City		State		ZIP		Country

Name of Additional Joint Inventor, if any:	<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])	Family Name or Surname					

Inventor's Signature					Date	
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